Exercise 1 For $g(x) = \frac{1}{2}(x+2)^2 - 7$, determine the following properties:

Exercise 1.1 *Does the graph open upwards or downwards?*

Multiple Choice:

(a) *upward* ✓

(b) *downward*

Exercise 1.2 *Identify the vertex:*

$$(\boxed{-2}, \boxed{-7})$$

Exercise 1.3 *Determine the x-intercepts*

smaller x-intercept   larger x intercept

$(\boxed{-2 - \sqrt{14}}, 0)$ $(\boxed{-2 + \sqrt{14}}, 0)$

Exercise 1.4 *Determine the y-intercepts*

$$(0, \boxed{-5})$$

Exercise 1.5 *Determine the maximum or minimum value of the function.*

Multiple Choice:

(a) *maximum*

(b) *minimum* ✓

Max or Min Value: $\boxed{-7}$